

WHAT IS CLAIMED IS:

Sub 1
1. A flash-based unit for providing code to be executed by an external processor, comprising:

- (a) a flash memory for storing the code to be executed, said flash memory being of a type such that the code cannot be executed in place from said flash memory; and
- (b) a volatile memory component for receiving at least a portion of the code to be executed, such that at least said portion of the code is executed by the external processor from said volatile memory component.

2. The flash-based unit of claim 1, wherein the external processor is in communication with the flash-based unit by a bus, the flash-based unit further comprising:

- (c) a logic for receiving a command to move said at least a portion of the code from said flash memory to said volatile memory component.

Sub B1
3. The flash-based unit of claim 2, further comprising:

- (d) a power storage for storing at least a limited amount of power for supplying power to the flash-based unit if power is not otherwise available, power being drawn from said power storage when said logic determines that said power is not otherwise available.

Sub B1
4. The flash-based unit of claim 3, wherein said power storage provides only sufficient power to write data in said volatile memory to said flash memory.

5. The flash-based unit of claim 4, wherein said power storage is a capacitor.

6. The flash-based unit of claim 1, comprising a single chip for containing all components of the flash-based unit.

7. The flash-based unit of claim 1, comprising a single die for containing all components of the flash-based unit.

8. The flash-based unit of claim 1, wherein said flash memory only permits data to be read in one or more specific sizes of blocks.

9. The flash-based unit of claim 8, wherein said flash memory is a NAND-type flash memory.

10. The flash-based unit of claim 1, wherein said volatile memory component is selected from the group consisting of S-RAM and D-RAM.

Sub B1 11. The flash-based unit of claim 1, wherein the executable code is boot code.

Sub B2 12. A system for executing code from a restricted non-volatile memory, the restricted non-volatile memory being characterized in that code cannot be directly executed from the restricted non-volatile memory, the system comprising:

- (a) a CPU for executing the code;
- (b) a volatile memory component in direct communication with the restricted non-volatile memory for holding at least a portion of the code to be executed, said at least a portion of the code being transferred from the restricted non-volatile memory, such that said CPU executes said at least a portion of the code from said volatile memory component.

Sub B1 13. The system of claim 12, wherein the restricted non-volatile memory is a flash memory.

14. The system of claim 13, wherein said flash memory only permits data to be read in one or more specific sizes of blocks.

15. The system of claim 14, wherein said flash memory is a NAND-type flash memory.

16. The system of claim 13, wherein said volatile memory component is selected from the group consisting of S-RAM and D-RAM.

17. The system of claim 16, wherein the executable code is boot code.

18. A system for executing code, comprising:

(a) a flash-based unit for storing the code to be executed, said flash-based unit comprising a flash memory of a restricted type, being characterized in that code cannot be directly executed from said flash memory and a volatile memory component for receiving a portion of the code to be executed; and

(b) a processor for executing the code, said processor receiving at least said portion of the code from said volatile memory component;

wherein an additional memory component is not required for executing the code by said processor.

19. A method for booting a system, the system featuring a processor for executing code, the method comprising:

providing a flash-based unit in the system for storing the code to be executed, said flash-based unit comprising a flash memory of a restricted type, being characterized in that code cannot be directly executed from said flash memory, and a volatile memory component for receiving a portion of the code to be executed;

sending a busy signal to said processor;
transferring said portion of the code to said volatile memory component;
removing said busy signal; and
executing said portion of the code by said processor to boot the system.

20. A flash-based unit for providing code to be executed by an external processor, consisting essentially of:

- (a) a flash memory for storing the code to be executed, said flash memory being of a type such that the code cannot be executed in place from said flash memory; and
- (b) a volatile memory component for receiving at least a portion of the code to be executed, such that at least said portion of the code is executed by the external processor from said volatile memory component.

21. A flash-based unit for providing code to be executed by an external processor, comprising:

- (a) a flash memory for storing the code to be executed, said flash memory being of a type such that the external processor cannot read the code to be executed directly from said flash memory; and
- (b) a volatile memory component for receiving at least a portion of the code to be executed, such that at least said portion of the code is

executed by the external processor from said volatile memory component.

22. A method for booting a system, the system featuring a processor for executing code, the method comprising:

providing a flash-based unit in the system for storing the code to be executed, said flash-based unit comprising a flash memory of a restricted type, being characterized in that code cannot be directly executed from said flash memory, and a volatile memory component for receiving a portion of the code to be executed;

transferring said portion of the code to said volatile memory component;

and

executing said portion of the code by said processor to boot the system.

23. The method of claim 22, wherein transferring said portion of the code to said volatile memory component further comprises:

transferring a first portion of the code to said volatile memory component, said first portion of the code containing a command for copying a second portion of the code;

executing said command by said processor; and

copying said second portion of the code for booting the system.

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